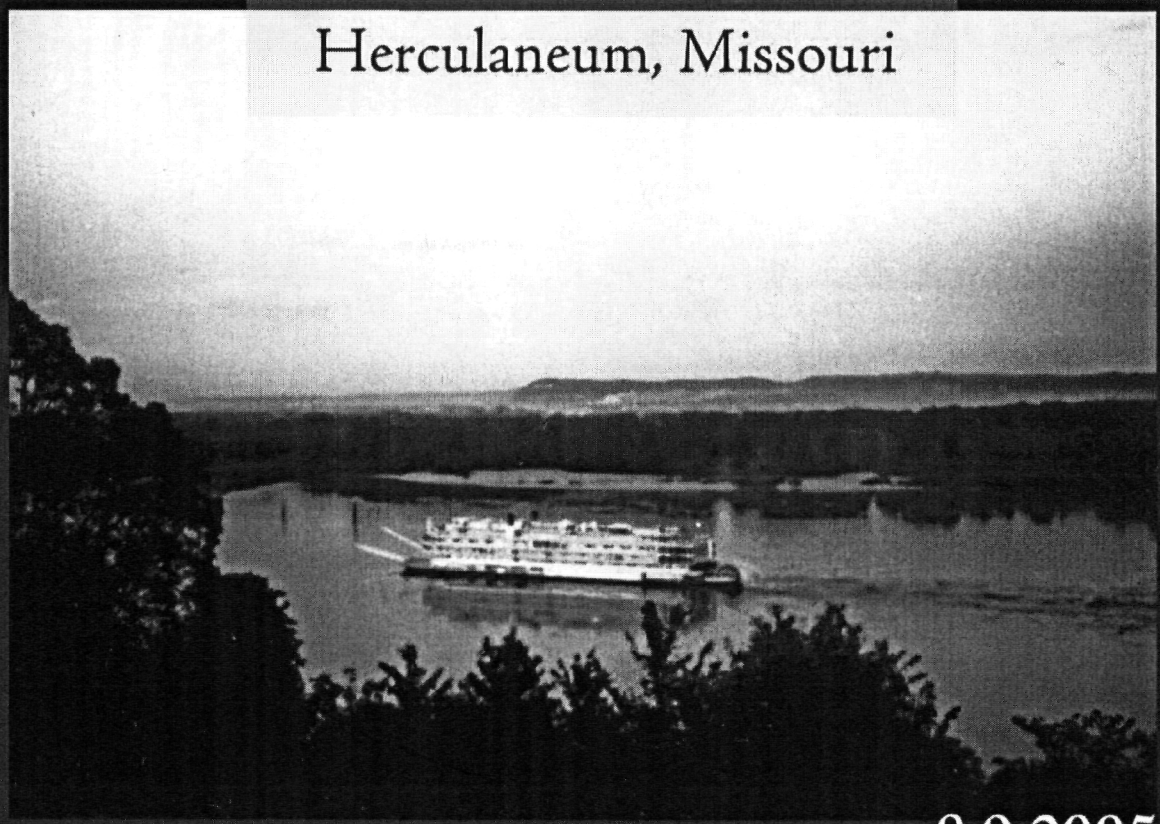
STATE of the ISSUES in Herculaneum, Missouri



8.9.2005

Agency for Toxic Substances and Disease Registry
Environmental Protection Agency
Missouri Department of Health and Senior Services
Missouri Department of Natural Resources

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Briefing book content provided by agency staff from ATSDR, DHSS, DNR and EPA. The technical issue papers represent information available at the time of print and may not include the full scope of agency issues and proposed actions. Briefing book compiled by The Perspectives Group.

HERCULANEUM INTERAGENCY CORE TEAM UPDATE

August 5, 2005

The Herculaneum Interagency Core Team

On June 14, 2005, key agency staff from ATSDR, DHSS, DNR and EPA met to assess the status of agency activities in Herculaneum, Missouri. Participants agreed that any potential solutions to Herculaneum's lead contamination issues will require the community to be closely involved in making decisions and sustaining relationships. The meeting resulted in several recommendations:

- Work collaboratively where possible across agencies to identify and resolve issues;
- Speak with one voice to the Herculaneum community; and
- Explore formation a community group to evaluate options and alternatives affecting Herculaneum.

In support of the recommendations, an Interagency Core Team consisting of Cherri Baysinger (DHSS), Denise Jordan-Izaguirre (ATSDR), Kerry Herndon (EPA), and Dennis Stinson (DNR) was delegated the task of discerning how the agencies may work with the community and what the work would entail.

The Core Team met three times between June 14 and July 21 to:

- Explore options and anticipated outcomes for working with the community;
- Clearly articulate the purpose and goals for working with a community group;
- Identify issues and decisions that require community participation; and
- Make recommendations to the Agency Stakeholder Group.

The team also sought clarity regarding its own purpose and goals by testing assumptions with and gathering input from agency supervisors and colleagues.

Core Team Goals

The Core Team developed the following goals for this cooperative effort:

- Ensure health and safety of residents within contaminated areas or within a pre-determined proximity to the plant.
- Maintain agency presence in community, as promised.
- Access and provide technical assistance & expertise for the community.
- Develop and provide resource materials to support decision-making by the community on reuse of contaminated areas.
- Provide facilitation resources to support the work of the community.
- Bring legal authority to the community.
- Design a process for working with the community (structure, start-up, agency representation).
- Communicate the Purpose and Goals for working with the community to agency stakeholders.

Proposed Purpose and Goals for Working with the Community

The primary purpose for working with the community is to build the community's capacity to address health and environmental issues by providing assistance in interpreting the real life implications of technical information, and to focus on actions that will allow the community and the Doe Run Company to:

- Foster a mutually beneficial relationship;
- Evaluate future land uses for lands affected by the lead smelter in terms of feasibility, cost, public health protection and public acceptability and make decisions/recommendations; and
- Enhance communication on issues of health and environment and regarding agency reports and studies on health and environment.

Potential goals for community group:

- Ensure health and safety of residents in impacted areas or within an agreed upon proximity to the plant.
- Define Doe Run's responsibility for coexistence in the Herculaneum community.
- Gather input from community stakeholders in order to inform agency decisions.
- Review input and recommendations for how to rollout results of future studies to the community.
- Support the development of plans for the reuse of contaminated areas.
- Contribute to the creation of a healthy community with a lead smelter.

Core Group Recommendation: Work with the City Council

The Core Team recommends that the agencies utilize the Herculaneum City Council as the primary community group for gathering input or making decisions.

- Agencies would report and work with the City Council on community related health & environmental decisions.
- Agencies would initially meet directly with the City Council to propose a process to move forward options, alternatives and decisions.
- The City Council could delegate to a subgroup (whom they would appoint) and with whom the agencies would work to develop recommendations or simply do the work as the city's decision-making body.
- To pursue this option, the Core Team recommends:
    - Coordinating timing of meeting with the City Council when study data is available, when contractors supporting re-use studies can participate, and when agencies have identified key questions that require community input or are ready for community action;
    - Using these meetings to enhance understanding of technical issues by the city; and
    - Using the Core Team as the Agency representatives with the City Council. The Core Team would request assistance of key staff as needed, depending on the issues being addressed.

Agency Technical Issues

August 2005

SECTION 1 – Recontamination

Issue Paper 1: Recontamination

Issue:

Monitored residential properties within a mile of the Herculaneum Smelter are becoming recontaminated with lead. Since August 2002, EPA has collected data on soil lead levels on a regular basis in residential yards that have been remediated. Samples were collected weekly at first, then quarterly later on. Data from these 20 residential properties has been analyzed on a yard-by-yard basis (by EPA), as well as in _ mile increments from the smelter (by DNR). Both analyses have shown that lead concentrations in residential soils are increasing over time. Both analyses have shown that recontamination is occurring at a higher rate in yards that are closer to the smelter than in yards that are farther from the smelter. DNR staff have studied lead re-deposition rates in residential soil and have found that average soil concentrations will be above a health-based standard within one-quarter mile of the smelter within four years and out to _ mile within seven years. DNR has calculated a rate of re-contamination while EPA has been reluctant to do so. EPA has, however, stated a range for the rate of recontamination.

Agreements/Decisions Needed:

All agencies are in agreement that recontamination is occurring in areas adjacent to the smelter with areas closer to the plant becoming recontaminated at a higher rate. All agencies agree that data collection needs to continue. While DNR has calculated a rate, EPA prefers to state a reasonable narrow range of rates of recontamination.

Decisions Needed:

- What additional controls or materials handling procedures by Doe Run will reduce recontamination to acceptable levels?
- What remedial measures can the agencies or the community require of the company if and when recontamination reaches a selected level?
- What remedial options/land management strategies would reduce the community's exposure to contaminants to an acceptable level? (ex. Landscaping and greening, phosphate treatment, comprehensive community awareness campaign, program to advise and assist people doing excavation/construction work, programs to improve community health such as: dust control, improving recreational spaces, programs to deal with lead based paint, seed and fertilizer to households needing assistance to improve lawn cover, etc.)
- What is an acceptable rate of recontamination?

Data Gaps/Data Needed To Make The Decision:

Data is needed to refine a rate of recontamination. Changes in facilities operation affects the rate of recontamination so ongoing data collection will be necessary to monitor these changes. Additional monitoring will need to occur after facility operation changes have been made.

Who Is Involved In Resolving the Issue:

DNR/EPA/ATSDR/DHSS/Doe Run (?)

Timeframe For The Decision:

As soon as reasonably possible. However, changes in facilities operation affects the rate of recontamination. Monitoring after these changes are made will provide new results by Winter or Spring 2006.

Cost:

EPA will have cost associated with data collection, analysis and statistical review. DNR will have staff time cost associated with review and analysis only.

Relationship Of Decision To Other Factors/Issues:

This issue is intricately linked to reuse of the buy out zone. For example, properties within areas where recontamination rates are high may not be appropriate for certain land uses, such as residential. This decision is also related to other property issues outside of the buyout zone, such as whether the buyout should be extended. Additionally, not all quadrants were excavated in all remediated yards. Because of recontamination, quadrants that were once considered clean may now be contaminated. At some point, these areas should be resampled and reevaluated.

How Will Information Be Shared:

Information on recontamination is shared every other month at CAG meetings. Information is shared among agency personnel on a fairly regular basis. If and when the agencies work with the city council as proposed, information would be shared as available with that group.

What Decisions Can The Community Make In Relation To The Issue:

- What is an acceptable frequency for yard clean-ups to occur?
- What are appropriate uses for property in and outside the buyout where recontamination is occurring?

Issue Paper 2: Materials Handling

Issue:

Lead contamination is occurring in the Herculaneum community as a result of the way raw materials (lead concentrate) are being transported to the site, the way materials (concentrate, slag, run-off) are being handled or managed on-site and the way materials are being tracked off-site. While Doe Run has made improvements in all of these areas over the years pursuant to a Transportation and Materials Plan agreement with EPA, they have not done enough to prevent recontamination from occurring. Haul routes continue to show contamination even with regular street sweeping. Soils in nearby yards are seeing increasing levels of lead contamination. The slag pile remains uncovered and subject to wind transport of unconsolidated material and onsite housekeeping is inordinately poor for a facility operating in this century.

DNR has not been satisfied with Doe Run's efforts on this issue and numerous comments have been written on the Transportation and Materials Handling Plan (TMHP) that is part of the Settlement Agreement. HWP staff tried to incorporate TMHP approval with our Settlement Agreement to resolve the previous Abate, Cease and Desist Order. Doe Run resisted stating they did not want multiple agencies to approve this plan. EPA at that time assured the department that they would fully incorporate our comments on the TMHP. Since that time, multiple drafts of the TMHP have been written. EPA has approved the plan despite a large number of the department's comments that remain unaddressed. The department has consistently taken the position that the plan and implementation of the plan is insufficient to adequately reduce lead releases from their transportation and materials handling activities.

Doe Run has recently completed a world tour of similar operations to benchmark best practices for materials handling. They are preparing a report from this tour.

Agreements/Decisions Needed:

- Is there a need to revise the THMP?
- What should the agencies require of Doe Run in revising the THMP?
- What additional studies are needed to devise a new THMP?
- Are interim improvements needed before studies are complete?
- Would a holistic plan of operation such as an EMS (Environmental Management Systems) plan work?
- The way that materials are handled while entering and exiting Doe Run's facility may affect recontamination in Herculaneum. Additionally, there are physical and air hazards for residents from truck traffic.
- Doe Run is providing new information with regard to transportation and materials handling in August. It would be very helpful if EPA coordinated our response to this new information. We want to ensure that , so that a plan that is still considered inadequate by one agency does not get approved by another.
- Can anything short of a completely re-designed and rebuilt transportation and materials handling system adequately reduce off-site releases from this process?

Data Gaps/Data Needed to Make the Decision:

Should additional studies be completed to gather more information regarding releases from transportation and handling of concentrate? As stated above, Doe Run will be releasing new information on transportation and materials handling in August. This will be in the format of a report prepared based on a tour of other lead handling facilities. Part of this report will address transportation issues at the mines/mills as well as at the

smelter. The department has stated in the past that this is an important aspect of transportation and materials handling. This data gap should be resolved based on Doe Run's report.

Another important issue is how the new road and bridge may change transportation and materials handling in Herculaneum.

Who is Involved in Resolving the Issue:

EPA, DNR, AGO, Doe Run, potentially the City, MDOT

Timeframe for the Decision:

Doe Run plans on submitting information to EPA and DNR in August on how they will intend to improve materials handling and transportation. Agencies should work quickly to review and comment on these plans. Materials handling issues could make a big difference in reducing risk.

Costs:

Costs depend on if EPA pays for additional studies. Other agencies will accrue staff time in reviewing Doe Run submittals.

Relationship of the Decision to Other Issues/Factors if any:

Materials and handling issues are tied to recontamination, impact of trucks on recontamination, slag pile, RCRA issues, speciation, and bioavailability

How will the information about this issue & the decisions made be shared & with whom:

Information is shared at the CAG meetings. Information will be shared with the city and the public once the path forward has been determined.

What Decision(s) Can the Community Make in Relation to This Issue:

Materials and handling issues affect recontamination rates. Decisions can be made with regard to zoning or reuse regarding future recontamination. Construction of the road and bridge will significantly impact recontamination from transportation in town, and the city is the lead on this project.

Issue Paper 3: Slag Pile/Wetland Mitigation - Use For Bridge

Issue:

Slag pile stabilization, wetland mitigation, and using slag for bridge and road construction are closely associated issues. DNR has taken a position that the stabilization and closure of the slag pile should minimize the footprint of impact in the wetland. DNR believes the EE/CA for slag pile closure failed to minimize the footprint and has insisted on a 3:1 mitigation ratio for any wetland impacted by the closure. Doe Run has resisted this mitigation ratio. DNR has also stated unofficially that it will we would support placement of slag under a new road and bridge. The placement of significant quantities of slag under a cap provided for a bridge and road would help resolve a number of issues. It is estimated that approximately 200,000 cubic yards of slag could be used in the road/bridge construction. Doe Run has stated to DNR using this amount would allow them to meet the 3 to1 mitigation ratio since the amount of wetlands disturbed in the slag pile closure will be reduced.

Agreements/Decisions Needed:

Agencies agree that slag can be used in new bridge/road construction if properly used and some form of IC is put in place. DNR and EPA agree that this use will minimize the slag pile closure footprint. DNR will define proper use for Doe Run.

Data Gaps:

The slag did not fail EPA's TCLP analyses. EPA and DNR need to assure that slag is properly covered so it will not be re-exposed and also need some type of institutional control. The type of institutional control needs to be determined.

Who Needs to Be Involved in Resolving This Issue:

EPA, DNR, Doe Run , City of Herculaneum.

Timeframe for decisions: During the first week of August DNR will be issuing a letter to Doe Run that will allow the use of slag for fill during the bridge construction. The bridge will not be constructed until 2006 at the earliest.

Cost:

DNR sStaff time in reviewing Doe Run submittals.

Relationship of Decision to Other Issues/Factors:

New bridge construction will improve truck access to the plant. The new haul road will not pass through residential areas of Herculaneum. This will affect material handling and transportation and the recontamination issue.

How Will Information Be Shared:

Information will be shared with the CAG, city and the public.

What Decisions Can the Community Make in Relation to This Issue:

- They can make decisions with regard to zoning or reuse of areas near the plant once new road and bridge are in place. New road and bridge should lessen contamination along truck routes presently being used. Trucks should only use this new road and bridge to deliver concentrate.

Issue Paper 4: Doe Run Compliance with RCRA

Issue:

A RCRA sampling inspection was conducted June 20 through 24, 2005. Fourteen RCRA violations were cited during inspection. Two additional violations have been identified and confirmed since the inspection. Soil and waste samples collected during the inspection show that the facility has allowed waste to be illegally stored and disposed onsite. Soil samples were collected during the inspection. All samples failed TCLP metals except for one sample. One off-site sample failed TCLP for cadmium, lead and mercury. The remaining soil samples failed TCLP for lead and/or cadmium.

RCRA violations cited during the CSI include:

1. Used oil containers not closed. Violation rescinded.
2. Used oil containers not in good condition.
3. Failure to clean up used oil leak or spill.
4. Failure to retain copy of a manifest for three years.
5. Contingency plan does not describe personnel actions for fires, explosions and releases of hazardous waste.
6. Emergency equipment found in the Contingency Plan does not include locations and capabilities as required.
7. Emergency Coordinator phone numbers not correct and missing.
8. Description of arrangements with local emergency response agencies not included in the Contingency Plan.
9. Hazardous waste container storage area not inspected weekly.
10. Hazardous waste container not labeled per DOT requirements during entire onsite storage.
11. Failure to re-notify with the State of Missouri (DNR).
12. Failure to label used batteries with the words "used batteries."
13. Failure to make a waste determination on sulfuric acid leak from pipeline from acid storage tank.
14. Not all employees receive DOT annual training.

*15. Illegal disposal of hazardous waste (acid spilled or leaked on the ground).

*16. Illegal waste pile.

* violations to be added to the list based on information collected during the CSI.

Doe Run has allowed RCRA exempt waste to be released off-site (i.e., slag on the north side of the facility was observed along the banks of the Mississippi River). Was it placed there or did it get washed there during rainfall events via storm water runoff? Heavy metals were detected, in excess of TCLP limits, both on and off-site (north side of the facility). Additionally, Doe Run was allowing black sulfuric acid to leak onto the ground at the acid storage tanks located on the north side of the facility without attempting to stop the leak or clean up any spilled acid.

Agreements/Decisions needed:

Whether to issue a 3008(a) administrative penalty order and/or a 7003 or both 7003/3008(a) order. Facts support both a 7003 and 3008(a) to be issued.

Suggested injunctive relief would include:

1. Removing slag piles on north side of facility and installing groundwater monitoring wells on north side of facility if none are present now.
2. Posting warning signs on north side of facility. None are present at this time.

3. Controlling access to the north side of the facility. At the present time there is very little if any controls to limit or control access to the north side of the property.

Data Gaps/Data Needed to Make the Decision:
Additional soil samples should be collected to characterize releases of solid and/or hazardous waste.

Who is involved in resolving this issue:
Doe Run, DNR and EPA

What is the Timeframe for Making Decisions:
As soon as possible.

Costs:
To be determined.

What is the Relationship of the Decision to Other Issues/Factors if Any:
Recontamination, slag pile, materials handling, and possibly NAAQS compliance.

How Will Information Be Shared?
All decisions will be shared with the facility and DNR.

What Decision(s) Can the Community Make in Relation to This Issue?
Unknown

Issue Paper 5: Doe Run Compliance with NAAQS (National Ambient Air Quality Standards)

Issue:

During the first quarter of 2005 Doe Run received a Notice of Violation (NOV) from the State's Air Pollution Control Program (APCP) for exceedence's of the NAAQS standard at the Broad Street monitor. Doe Run claimed they experienced a bag house malfunction on March 20, 2005 that contributed to the problem.

Subsequently EPA sent a CAA/CERCLA 114/104(e) letter requesting additional information on the violation. EPA's Air Planning and Development Branch (APCP) is currently reviewing Doe Run's response to determine if there is enough information included to complete deposition modeling and determine what additional control measures may be needed at the facility. If/when enough information is available, modeling can be completed in-house within 6 weeks of receipt. EPA's Air Program must also decide whether the NAAQS violation warrants notification to the Governor that Missouri's lead plan is inadequate to protect the lead NAAQS. The required response could take at least 18 months and would require DNR and Doe Run to conduct speciation studies to determine the various sources of releases, modeling to determine rate of release from various sources, and modeling to determine where to place control measures in order to reduce releases. The end product would be a new Control Strategy which must go through state and federal rule-making.

APCP has approached Doe Run with the idea of constructing additional emission controls as a possible settlement option for the NOV. Doe Run has approached DNR about moving their boundary fence out further into the buyout so some of the current air monitors can be removed farther away from the plant. A problem with this is there are several residences within the new area that Doe Run does not own, or which the department has granted exceptions for elderly renters to remain. Doe Run is investigating options to complete the buy-out in order to move additional residents away from the plant so their boundary fence can be moved. DNR and Doe Run are also currently reviewing new monitor locations. Doe Run has an air pollution permit and a State Implementation Plan.

Agreements/Decisions needed:

- Is there enough data to complete deposition modeling from stack emissions?
- What additional measures should Doe Run implement to reduce emissions?
- Who has the best tools to assure implementation of new measures?
- Is a new Control Strategy needed or is there another way to assure compliance and protection of human health and environment?
- Reach agreement between EPA, DNR and Doe Run on the appropriate locations of permanent monitors.
- Are additional studies needed in order to determine long term solutions at the site?
- Is the buy-out zone an exclusion zone? If not, what activities can occur there?

Data Gaps/Data Needed to Make Decisions:

- How do we achieve certainty about the sources of releases?
- What will modeling show?

Who is Involved in Resolving the Issues:

- EPA, DNR, Doe Run, Attorney General's Office
- The City, once certain agency decisions are made.

Timeframe for the Decision:

EPA and DNR need time to work together to reach consensus.

Costs:

Staff time for modeling, review of submittals, development of responses and recommendations, and getting needed approvals through the management chain.

Relationship of the Decision to Other Issues/Factors if Any:

The CAA provides tools for assessing and managing air releases from current manufacturing operations. Current releases are contributing to the recontamination of yards cleaned up under Superfund Authority. Air program modeling provides the best predictor of future impacts and thus recommendations to the community on future use of impacted lands. The outcomes of these studies and regulatory decisions impact recontamination and land re-use decisions by regulators and community leaders.

How Information Be Shared:

Currently, information can only be shared internally (among the agencies) until legal and programmatic decisions have been made. A strategy fneeds to be developed for making the information public needs to be developed. Then information will be shared with elected officials, the CAG, and the public.

What Decision(s) Can the Community Make in Relation to This Issue:

Once the agencies can predict which areas of the community will be impacted by smelter operations and assign various levels of risk, the community and Doe Run can begin planning for re-use. The City will need to decide how to manage city streets and city property near the plant, make zoning decisions, and begin making or amending master plans for the community.

Issue Paper 6: NAAQS Lawsuit

Issue:

In 2004, the Missouri Coalition for the Environment (MCE) and two individuals in the Herculaneum area filed suit against EPA for failure to review the lead NAAQS within statutory deadlines (at least every five years). The state of Missouri filed a separate case involving similar issues which was subsequently dismissed. While the case brought by MCE is pending, EPA has begun its review of the NAAQS and has asked the Court for a schedule requiring completion of the review in 2009. MCE has asked the Court to order EPA to complete the review in 2006. The case has been briefed (EPA's position is that we cannot complete a defensible and technically sound review before 2009), and we are awaiting a decision by the Court establishing a schedule. While the outcome of EPA's review could impact Herculaneum (e.g., if the NAAQS are ultimately revised), the outcome of the case would not directly impact Herculaneum, because it would only set a schedule for EPA to complete the review. A judge ruled that Missouri does not have standing.

Agreements/Decisions Needed?

A decision by the Court, as described above.

Data Gaps/Data Needed to Make the Decision:

N/A

Who is Involved in Resolving This Issue?

N/A

Timeframe for making decisions:

No timeframe for court decision. EPA plans to complete its review as soon as possible regardless of the decision.

What costs will be incurred?

N/A

Relationship of the Decision to other Issues/Factors:

No relationship, except, as described above, the consequences of EPA's review of the NAAQS.

How Information Will Be Shared:

EPA will distribute information to nonparties (e.g., state of Missouri) as received and as appropriate.

What decision(s) Can the Community Make in Relation to this Issue?

None

SECTION 2 – BUYOUT ZONE

Issue Paper 7: Rehabilitation and Reuse of Buyout Zone

Issue:

In May 2002, the Governor's Office, the Attorney General's Office, and the Department of Natural Resources (DNR), in conjunction with the Department of Health and Senior Services (DHSS), and EPA negotiated a Settlement Agreement containing a Voluntary Property Purchase Plan, which required Doe Run to make fair-market value purchase offers to the 173 residential properties located closest to the smelter. The voluntary property purchase was part of the settlement of an earlier cease and desist and abatement order issued by the Department of Natural Resources and appealed by Doe Run. The state felt a property buy-out was an appropriate action due to:

1. Findings from DHSS indicating that over 50% of children living within one-half mile of the smelter had elevated blood lead levels
2. An analysis of historic (1990-2000) information and data collected under the 2001 AOC that indicated recontamination rates averaged 600 ppm/year within one-quarter mile of the smelter

To date 143 out of the 173 properties have accepted Doe Run's offer. Besides homeowners not accepting the buyout, six renter exceptions have been granted by DNR and DHSS.

Since 2001, The Doe Run Company has also been replacing soils in yards where lead levels exceeded 400 ppm and cleaning home interiors for those properties. The EPA Superfund Program has been providing oversight of this work. EPA's expectation was that historic releases would be cleaned up, health risks would be removed and residents could resume unrestricted activities on their property. After the state's 2002 Settlement Agreement, EPA began monitoring residential property for recontamination. In 2004, independent analysis of that data by both DNR and EPA concluded that recontamination was occurring near the smelter at statistically significant rates.

Because of the nearness of the buy-out zone to the plant site and because of recontamination, DNR has indicated that future land use in the zone cannot be residential. Community leaders have said they would be interested in a commercial/industrial use with a focus on job generation. The feasibility of this option has not been tested, and rests largely on a new road and bridge being constructed into the City. The community is concerned about the future of buy-out zone because they are losing tax revenues while maintaining an infrastructure that is failing, and worry that the area will be come blighted from lack of occupancy. The community as a whole is undergoing major changes with new residential and commercial development along I-55, and there is a need for holistic planning for the future including the "old town" area where contamination has been an issue.

Doe Run has indicated that they would like to establish a small buffer zone adjacent to their facility and use the remainder of the properties again for residences. Doe Run has also requested that several of their employees be allowed to live in these homes. (This would be employees only, not their families, who would live there during the workweek.) ATSDR has said that there is no current threat from lead in these properties, and the employees are participating in a medical monitoring program. DHSS and DNR would prefer that this area be used in a manner with a lower potential for exposure to occur.

Agreements/Decisions Needed:

- Doe Run wants to create a green zone around their plant, and move their fence and air monitors outward. Where will their new boundary be?
- What activities can be conducted inside and outside of their plant boundary? In fringe areas? In the remainder of buy-out zone?
- What land uses can we recommend at various distances from the plant site?
- What about properties that are outside the buy-out zone but still at risk of recontamination?
- What are standards for long term care of the community that Agencies or community can impose to allow land use planning to proceed?
- What options for revitalization of impacted lands are feasible from an economic, public health and public acceptance perspective?
- Is a risk assessment needed to reach closure on the above issues? If not, what is the basis for decision-making?
- What decisions will the agencies allow the community to make with regard to re-use?
- What is an acceptable rate of recontamination for industrial/commercial/residential properties?
- What is an acceptable soil lead level for industrial, commercial, and residential properties?
- Agreement on acceptable uses (residential OK?) is needed.
- What is an acceptable remedial action frequency for industrial, commercial, or residential properties?
- Is perpetual cleanup an option that regulators, the community and Doe Run would accept?
- Will Doe Run cooperate with any commercial/industrial or other redevelopment plan since they own most of the land in this area?

Data Gaps/Data Needed to Make the Decision:

- Air deposition modeling.
- Risk assessment from Doe Run?
- Feasibility studies of reuse options.
- Public input and input from elected officials.
- Agency senior officials input – what policies can they support? Which decisions do they want to make vs. ones they want the community to make?
- Recontamination and air monitoring data will need to continually be collected to determine appropriate uses/risks.

Who is Involved in Resolving the Issue:

EPA, DNR, ATSDR, DHSS, Doe Run, Governor, Attorney General's Office, community

Timeframe for the Decisions:

The sooner the better, but after decisions related to recontamination are made. It may take several years before final resolution of the buyout is known; however, there should be a way to make some decisions now and some later. Although scattered, there may be residents living within the buyout. These homes may create difficulties over time since they could impact some uses of the buyout area.

Costs:

- Staff time and travel.
- E2 Inc. (EPA HQ contractor: $17K of work approved; $20K requested from R7 Superfund Pipeline) Work is to assist with developing viable reuse options for affected lands; study includes determining economic and environmental feasibility.
- The Perspectives Group (R7 contractor to assist with strategy and communication: $38K work assignment started July 1, 2005.)
- Additional funds will be needed if we provide a facilitator for meetings with community leaders or other community groups.

Relationship of the Decision to other Issues/Factors if any:

This issue relates to many factors including recontamination, NAAQS compliance, long-term stewardship by the company, and current and future use of the buy-out zone.

How Information Will Be Shared:

An information-sharing strategy needs to be developed. Progress will be shared on a regular basis among agency staff. Information will be shared with elected officials, the CAG, and the public once a path forward has been determined.

What Decision(s) Can the Community Make in Relation to This Issue:

- Decide best future use options and zone accordingly, once agencies provide guidance. Decide how to implement development options.
- Acceptable frequency of remedial actions (from community viewpoint).
- Preferred use of properties that are contaminated, or will require remedial actions on a basis that is too frequent for residential properties
- What are appropriate uses for property in the buyout area?
- Should vacant houses be torn down? The Settlement Agreement describes how this issue will be handled.
- What is the status of city hall and other city properties within the buyout?

Issue Paper 8: Bioavailability

Issue:

Bioavailability refers to the body's ability to absorb a particular compound, in this case lead. Bioavailability becomes important because the rate that a chemical is absorbed into the body has important implications for risk assessment and determining cleanup levels for lead. Risk assessment assumptions include variables such as exposure frequency, exposure duration and bioavailability. Risk and cleanup level calculations for lead are particularly sensitive to the bioavailability factor. The higher the bioavailability, the higher the predicted risk and the lower the calculated clean up level. Bioavailability for soils and household dusts was measured experimentally using two methods: in-vivo and in-vitro. The bioavailability for lead in soils at Herculaneum measured by both the in-vivo and in-vitro methods exceeds the default value indicating that the final cleanup level will be lower than the default 400 ppm. However, there was not good agreement between the measured bioavailabilities using the in-vivo and in-vitro methods. The measured bioavailability for lead in dust, measured by both the in-vivo and in-vitro methods, is slightly lower than the default value.

Agreements/Decisions Needed:

Bioavailability factors to be used in the IEUBK for soils and dusts that will ensure protection of community living currently and in the future.

Data Gaps/Data Needed To Make The Decision:

Finalized reports from in-vitro/in-vivo tests
Clarification on differing soil bioavailability factors from in-vitro/in-vivo tests

Who Is Involved In Resolving the Issue:

DNR/EPA/DHSS/ATSDR/Stan Casteel/John Drexler/TRW?

Timeframe For The Decision:

Decisions must be made before the risk assessment can be done, or before final cleanup levels can be determined. Much of the information is available in draft form and should be finalized within a month.

Cost:

???

Relationship Of Decision To Other Factors/Issues:

Bioavailability information is needed to conduct the risk assessment for the site, as well as to determine a final cleanup level for properties in Herculaneum. This information will also factor into the reuse issue, as the residential cleanup level may change.

How Information Will Be Shared:

Informally and routinely among the agencies, and at public meeting separate from CAG meetings.

What Decisions Can The Community Make In Relation To The Issue:

None

Issue Paper 9: Speciation

Issue:

Speciation refers to the identification of the different lead forms and compounds found at the Herculaneum site. The speciation work that was recently performed by Dr. John Drexler included the identification of lead forms found in surface soil, interior house dust, and road dust. Sampling and speciation were also performed on smelter media that included concentrate, slag, bag-house dust, ambient air dust, and sinter plant dust. Dr. Drexler concluded that yard soils have fingerprinting forms that are common to the Doe Run facility. He also concluded that paint and gasoline were not significant contributors to the lead at the site. EPA is awaiting final peer review comments before approval of the Drexler report.

Agreements/Decisions Needed:

Final approval of the Report. The Drexler Study was necessary to support potential future enforcement action with Doe Run. Speciation data will also provide background on activities that are contributing to recontamination of yard soils.

Data Gaps/Data Needed to Make the Decision:

None.

Who is Involved in Resolving the Issue:

EPA

Timeframe for the Decision:

The peer review should be complete, by mid August, 2005.

Cost:

EPA has provided funds for the speciation study.

Relationship of Decision to Other Factors/Issues:

NA

How Information Will Be Shared:

The Study will be made available to the public, Doe Run, and all agencies involved.

What Decisions Can the Community Make in Relation to the Issue:

The Study will provide background information critical to making response decisions and future land use decisions in the community.

SECTION 3 – HEALTH

Issue Paper 10: ALS Study

Issue: In 2001, Congressman Gephardt petitioned ATSDR to work with EPA and others to address the serious health risk posed by the Doe Run Lead Smelter in Herculaneum Missouri. Congressman Gephardt raised concern about the perceived elevation in cases of ALS. One individual with ALS knew of 15 other cases in the same area. The local ALS Society knew of 18 cases in the general area of Herculaneum. ATSDR had already begun looking at Prevalence Rates of MS at three other hazardous waste sites. Because both health conditions were being reported in communities near these sites and because individuals with MS or ALS would be under the care of numerologists, ATSDR funded prevalence studies looking at both conditions. Money was made available in FY 2003 to do a MS/ALS Prevalence Study.

Agreements/Decisions Needed:
None

Data Gaps/Data Needed To Make the Decision:
To determine if there are increased numbers of cases of MS and ALS living near hazardous waste sites.

Who Is Involved In Resolving the Issue:
ATSDR and DHSS

Timeframe for The Decision:
Prevalence Study should be done by the end of this year.

Cost:
Phase I will cost $50,000

Relationship of Decision to Other Factors/Issues:
If elevations are found, other studies to determine if there is a relationship to hazardous waste may be conducted. This would be useful information for Future Use and other risk management decisions.

How Information Will Be Shared:
ATSDR and DHSS will circulate press releases and hold public meetings to share the information and future actions.

What Decisions Can The Community Make In Relation To The Issue:
Not sure.

Issue Paper 11: Health Studies

Issue:

Residents of Herculaneum have asked for a health study (primarily a KXRF long bone study). A workgroup meeting was held in May 2003 to discuss what types of health studies might be feasible in Herculaneum. The workgroup was made up of lead researchers, agency personnel and community members. This group recommended a two-phase risk and health assessment study.

Phase one is a reconstruction of environmental exposure and a survey of the community about how long they have lived in Herculaneum and their interest in participating in a future health study. This study was started in the fall of 2004.

Phase two may be a longitudinal study of health effects and possible recontamination issues. It was suggested that long bone analysis be provided, even if there aren't enough participants for a health effects study as a service to the community and to provide them with information about their body burden of lead. Long bone testing is very expensive and the experts agree that the results don't mean anything other than the amount of lead in the long bone at the time of the test. It doesn't give any indication of how long it's been there or what the source of lead exposure was.

Identification of Decision Needed:

Is a phase two health study worthwhile? Will it be of any benefit or use to the community? Is the cost justified?

Data Gaps To Be Filled Prior To Making The Decision:

Determining sample size will dictate whether a health effects study can be done in Phase two and what type of health effect would be measured.

Who Is Involved In The Decision:

ATSDR/DHSS

Timeframe For The Decision:

The phase one health study should be complete by the end of calendar year 2005. The decision on whether to conduct the phase two health study could be made in 2006.

Cost:

Total cost is unknown. If a phase two health study is undertaken, depending on the type of health study, it will be very expensive.

Relationship Of This Decision To Other Factors/Issues:

This can factor into reuse issues and decisions.

How Information Will Be Shared:

When it is completed, information on the Phase one health study will be shared at a CAG meeting. The phase one study report will also be posted on the DHSS website. Any information about a phase two study will also be shared at CAG meetings.

What Decisions Can The Community Make In Relation To The Issue:

Does the community want ATSDR/DHSS to pursue funding for the Phase two study?

Issue Paper 12: Sulfur Dioxide

Issue:

Residents living near the smelter have periodically reported that they smell sulfur in the air and that smelter air emissions have damaged the paint on their cars. The Agency for Toxic Substances and Disease Registry prepared a Health Consultation in October 2002 that examined sulfur dioxide concentrations in Herculaneum. That consult found that the air concentrations were in compliance with the NAAQS, and that although there may be short periods where sulfur dioxide concentrations were higher, any effects of those short exposures tend to be short lived and clear up once the sulfur dioxide concentrations decrease. Because the ambient air monitor was not located in an optimal location and because of citizens expressed concerns during the health consultation process, DNR relocated additional monitors in the community. Since 2001, the smelter has been in compliance with the NAAQS for sulfur dioxide. Although there still may be short periods where the sulfur dioxide concentration is higher, concentrations do not appear to be sufficient to cause lasting adverse health effects.

Agreements/Decisions Needed:

None

Data Gaps/Data Needed To Make The Decision:

Continued monitoring to ensure that sulfur dioxide does not become a problem.

Who Is Involved In Resolving the Issue:

DNR and DHSS/ATSDR

Timeframe for the Decision:

Ongoing

Cost:

???

Relationship Of Decision To Other Factors/Issues:

Provides reassurance for citizens still living close to the facility.

How Information Will Be Shared:

ATSDR/DHSS will continue to review and evaluate monitoring.

What Decisions Can The Community Make In Relation To The Issue:

Unknown